

## CLAIMS

I claim:

1. A wiring network for a structure having a composite fabrication assembly made of a plurality of layers of composite materials for connecting components outside of the structure for sending and receiving transmittable information between the components, the wiring network comprising:
  - a. a plurality of conductive conduits placed between layers of the assembly, each having opposite ends;
  - b. a first gateway connector attached to one end of each conduit;
  - c. a second gateway connector attached to the other end of each conduit; and
  - d. a controller for selecting a conduit for selecting and directing the transmittable information over selected conduits.
2. The wiring network of claim 1, further including multiple component specific conduits between the gateways and a specific component.
3. The wiring network of claim 1, wherein the plurality of conduits comprise electrical wires.
4. The wiring network of claim 1, wherein the plurality of conduits comprise optical fibers.
5. The wiring network of claim 1, wherein each of said gateways is a bus.
6. The wiring network of claim 1, wherein each gateway is placed between layers of the assembly with the respective conduit end attached to the gateway within the layers, the gateway further including a terminal for connecting a component to the gateway externally of the layers.
7. The wiring network of claim 1, wherein said controller is a programmable server.
8. The wiring network of claim 7, wherein multiple conduits between gateways are associated with each externally connected component and wherein the server is adapted for selecting

1 any of a plurality of conduits for transmitting information between gateways to selected  
2 components.

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4 9. The wiring network of claim 8, wherein the selection of conduits is based on a  
5 predetermined hierarchy.

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7 10. The wiring network of claim 9, wherein the hierarchy is adapted for selecting the conduit of  
8 least resistance.

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10 11. The wiring network of claim 9, wherein the hierarchy is adapted for selecting the shortest  
11 conduit between selected components and related gateways.

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13 12. The wiring network of claim 7, further including a conduit selector on each gateway.

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15 13. The wiring network of claim 1, wherein said structure comprises a vehicle having a central  
16 control center and a plurality of components located remotely from the central control center  
17 and controlled from the central control center, and wherein at least one gateway is accessible  
18 by the control center and at least another gateway is accessible by each of the remote  
19 components.

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21 14. The wiring network of claim 13, wherein the vehicle comprises an aircraft having a cockpit,  
22 the controller being located in the cockpit and the remote component being located outside  
23 the cockpit.

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25 15. A wiring system for an aircraft comprising an outer structure a composite fabrication  
26 assembly made of a plurality of layers of composite materials for connecting components  
27 outside of the structure for sending and receiving transmittable information between the  
28 components, the wiring network comprising:

- 29 a. a plurality of conductive conduits placed between layers of the assembly, each having  
30 opposite ends;  
31 b. a first gateway connector attached to one end of each conduit;  
32 c. a second gateway connector attached to the other end of each conduit; and  
33 d. a controller for selecting a conduit for selecting and directing the transmittable  
34 information over selected conduits.

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2 16. The wiring system of claim 15, further including a cockpit with the controller located in the  
3 cockpit and the component located outside of the cockpit.  
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